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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,966	12/08/2005	Aya Imada	03500.017755	6543
5514 7590 12/31/2007 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER TRAN, BINH X	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 12/31/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/559,966

Applicant(s)

IMADA ET AL.

Examiner

Binh X. Tran

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/08/05; 3/22/06; 3/30/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the limitation "the substrate" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claims 17-22 are indefinite because they directly or indirectly depend on indefinite claim 16.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou (US 6,309,580) in view of Tamayoshi (JP 2000-315785).

Respect to claim 16, Chou discloses a process for producing a structure having holes, comprising:

providing a first member (substrate 18) having a patterning layer (20) (Fig 1A);  
forming a protrusion-depression structure on the patterning layer (20) by  
impressing a second member (10) having a protrusions on the pattern layer (Fig 1A-1C, col. 8 lines 5-45);

etching the substrate(18) using chemical etching, retaining the patterning layer in the depression of the protrusion-depression structure, to form holes (40) on the substrate, starting from the depression side.

Chou fails to disclose the step of anodizing the substrate by immersing the substrate in an anodization solution, or the first member (substrate) comprises of a material soluble during anodization on the layer. However, Chou clearly teaches to form the hole on the substrate while retaining the patterning layer. Tamayoshi teaches to anodizing the substrate by immersing the substrate in an anodization to form holes on the substrate, wherein the hole (20) can be formed having arranged corresponding to the pattern (paragraph 0014-0048). Tamayoshi further disclose the first member

comprises of a material (aluminum) that is soluble during anodization on a layer. It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Chou in view of Tamayoshi by anodizing the substrate by immersing the substrate in an anodization solution, because this technique provide a cheap, easy and short time process to create holes over a large substrate area (paragraph 0017).

Respect to claim 17, Chou discloses the patterning layer (20) consists of a material (thermoplastic) that is deformed when impress with a second member (Fig 1b, read on "material having a less strength than the second member"). Respect to claim 18, Chou discloses the patterning material contains methyl methacrylate, polymethyl methacrylate (aka PMMA, col. 8 lines 65 to col. 9 lines 20; read on layer contains an alkoxide, see evidence in prior art made of record).

Respect to claim 19, Chou discloses the height or depth of the protrusions of the second member is up to 200 nm (col. 8 lines 35-39). Chou further discloses the patterning layer (20) can has a thickness about 50 nm (col. 9 lines 12-15, 200 nm > 50 nm; read on "the height of the protrusions of the second member is larger than the thickness of the patterning layer). Respect to claim 20, Chou discloses the step of filling a function material into the holes (40) (col. 10 lines 45-50).

Respect to claim 21, Chou fails to disclose method for producing a magnetic recording medium wherein the function material is a magnetic material. Tamayoshi discloses a method for producing a magnetic device (abstract), including a magnetic recording medium (paragraph 0009, 0038) and the material is a magnetic material (paragraph 0027, 0090). It would have been obvious to one having ordinary skill in the

art, at the time of invention, to modify Chou in view of Tamayoshi forming a depositing a magnetic material into the holes to form magnetic recording medium, because this technique is cheap and easy (paragraph 0017).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wikipedia, the free encyclopedia, Methyl methacrylate, [http://en.wikipedia.org/wiki/Methyl\\_methacrylate](http://en.wikipedia.org/wiki/Methyl_methacrylate) discloses methyl methacrylate comprises alkoxide (i.e. methoxy group).

Wikipedia, the free encyclopedia, Acrylic glass, [http://en.wikipedia.org/wiki/Acrylic\\_glass](http://en.wikipedia.org/wiki/Acrylic_glass) discloses polymethyl methacrylate comprises alkoxide group.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X. Tran whose telephone number is (571) 272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Binh X. Tran*

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